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This study compared a grammar program using a linguistic approach with one using a traditional approach to determine how each affects children's ability (1) to construct sentences which have variety in structure, and (2) to comprehend silent reading. Five experimental and five control classes of fourth-grade children were randomly selected from different schools in comparable communities in Florida. The control groups received instruction from materials with an essentially traditional approach, and the experimental group followed materials from Robert L. Allen's "A Linguistic Approach to Writing, Discovery 1" and "Discovery 2." Pre- and post-test scores were obtained from an analysis of writing samples and from the "Gates-MacGinitie Reading Tests, Survey D." All data were analyzed by individual change scores. T-scores were calculated for (1) changes by all classes, before and after, (2) changes between pairs of experimental and control classes, and (3) changes between all experimental and all control children. Results favored significantly at the less than .001 level (1) the experimental group in variety in sentence structure, and (2) the control group in reading comprehension. (Author/JS)

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FINAL REPORT

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JULY, 1968

U. S. DEPARTMENT OF

HEALTH, EDUCATION, AND WELFARE

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University of Florida

Gainesville, Florida

July, 1968

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SUMMARY

The Problem

This project sought to determine the effects of an experimental grammar program utilizing a linguistically-oriented approach as compared with a control grammar program utilizing a traditional approach with fourth grade children.

Objectives

The specific objectives of this study were:

(1) Will fourth grade children who receive instruction in sector analysis 45 minutes per day, three days per week from October through May, write sentences showing greater variety in structure than will a comparable group who receive instruction in traditional grammar?

(2) Will children's knowledge of basic sentence parts and their organization as taught in this program improve their comprehension in silent reading, as measured by the vocabulary and comprehension sections of the Gates-MacGinitie Reading Tests more than the improvement in comprehension of a comparable group taught traditional grammar?

Method

This study was carried out by the following procedure:

(1) A survey of related research was made to determine what had previously been learned as a result of implementation of linguistics in the elementary grammar program.

(2) Five experimental and five control classes of fourth grade children were selected which represented urban, suburban, and rural areas of Florida. The experimental-control pairs were randomly selected and assigned from different schools serving comparable groups.

(3) The control group received instruction following grammar materials which were essentially traditional in their approach and the experimental group followed, for the most part, a linguistically-oriented program as presented in Robert L. Allen's A Linguistic Approach to Writing, Discovery 1 and Discovery 2. Work sessions were held throughout the year with the experimental teachers to give them the understandings needed to follow the experimental program.

(4) The following data were obtained on each child: (a) pre- and post-test scores on vocabulary and comprehension on the Gates-MacGinitie

Reading Tests, Survey D. (b) Pre- and post- writing samples which were analyzed for a score on mean T-unit length and variety in structure.

(5) All data were analyzed by individual change scores. Children's t-scores were calculated for (a) changes by all classes, before and after, (b) changes between pairs of experimental and control classes, and (c) changes between all experimental children and all control children.

Results and Conclusions

The results of this study were:

(1) When comparing changes in the variety in structure of sentences in the writing samples of all children in the experimental group with those in the control group, the changes reached significance at the $< .001$ level of confidence favoring the experimental group.

(2) When comparing changes in comprehension scores on the Gates-MacGinitie Reading Tests, Survey D of all children in the experimental group with those in the control group, the changes reached significance at the $<.001$ level favoring the control group.

On the basis of the stated results these conclusions were made:

(1) Fourth-grade children seem to be able to put to practical use in sentence construction the understandings derived from a study of grammar that focuses on identification and use of specific basic sentence sectors when this study is related to the way children use language in their everyday lives.

(2) Language understandings seem to mean more to fourth graders when they are presented by inductive, step-by-step procedures and are immediately followed by activities which provide opportunities for practical application of the understandings taught.

(3) The level and the ability to apply these understandings in constructing written sentences appear to be related to the level of oral language development of the children.

(4) Providing fourth grade children with numerous and varied opportunities for written expression seems to result in some improvement in written sentence construction no matter what approach the grammar program utilizes.

(5) The teaching of English sentence structure as was taught in this experimental program appears to contribute no more to silent

reading comprehension in fourth grade as measured by the Gates-MacGinitie Reading Tests, Level D than a traditional grammar program.

Implications and Recommendations

Recommendation #1: If the school grammar program relates the learning of sentence structure to the language the children already know and use in their everyday lives, as did this program, the study of grammar can have greater practical value. Furthermore, the program should utilize activities which provide for some sequence in language development.

Recommendation #2: A structured program in grammar whether it utilizes a linguistic approach or a traditional approach should be delayed until children have developed facility with listening and speaking skills. Furthermore, this recommendation could be extended to state that structured programs in reading and writing could well be delayed until children are better developed in the use of listening and speaking skills.

Recommendation #3: The findings in this study suggest to the investigator the need for future studies which could be longitudinal utilizing a sequential program such as was attempted in this study in order to make a complete evaluation of its effects on elementary grade school children.

Recommendation #4: Provision must be made for providing the type of background preparation in content and methodology for teachers which will give them the sound understandings for teaching new ways of analyzing language.

INTRODUCTION

In recent years there has been a growing effort to make the description of the English language more accurate and the teaching of it at all grade levels more realistic. As a result, teachers are turning to the work of linguists and are exploring the possibilities of various linguistically-oriented theories and ideas. The purpose of this study is to measure the effects of a linguistically-oriented grammar program as observed in the performance of selected fourth grade children in reading and sentence construction over a period of one academic year and to comment on the implications of the findings for English curriculum development.

As a child matures, the sentence structure of his writing can normally be expected to take on certain characteristics of diversification. The goal of the school language arts program is to provide experiences which will enhance the growth of this diversification. In seeking to reach this goal, many school systems give a substantial amount of time to a traditional English grammar program which includes the memorization of rules and definitions of terms and drill in correcting and completing artificially contrived sentences. In this study the control group treatment consisted of a traditional grammar program. The experimental group treatment consisted of an equivalent amount of time spent in a linguistically-oriented grammar program called sector analysis, which included instruction in the recognition of the various units or sectors within the total sentence structure which are shiftable. By rearranging these shiftables in different positions in relation to the two essential sentence parts, the subject and the predicate, greater variety in sentence structure will result. In assessing the experimental program the questions asked were whether such instruction would carry over into the children's own writing and result in their sentences having greater variety in structure and whether knowledge of the basic sentence parts would result in a greater level of comprehension in the children's silent reading.

All children participating in the study received the same approach in the teaching of reading and the other language arts. Only the grammar instruction received special treatment in the experimental group.

CHAPTER ONE

BACKGROUND FOR THE STUDY

Grammar Study in Schools

A substantial body of research has indicated that the teaching of English grammar in the traditional way does not contribute in any significant degree toward increasing fluency and precision in oral and written expression (9, 17, 20, 27) or to the improvement in ability to read and comprehend sentences (3). In spite of this, the traditional grammar program has held such an important place in the school curriculum for so many years that any innovations in such a program will be slow in receiving acceptance. A brief look at the history of traditional grammar helps one to understand how such a program originally gained status.

During the Middle Ages and early Renaissance, English and other languages in Europe began to be used for many kinds of writing which had previously been written in Latin. As a result, an interest in the grammar of English led Ben Johnson to write the earliest important English grammar (11). This was followed by the publication of the works of such grammarians as Robert Lowth (1762), George Campbell (1776), Lindley Murray (1795), and others (28). It is important to note that all of these grammarians were Latin scholars, and they formulated the traditional grammar of English on the description of the Latin language whether it fit or not. Evidence to this fact is apparent when we know that early in their study of grammar, children are introduced to the eight parts of speech. The same description of these eight parts of speech can be traced to that of the description of the parts of speech in the Latin grammar as far back as the second century B.C. Furthermore, the eighteenth century grammarians formulated definitive rules of syntax and usage which were prescriptive and which ignored the prospect of and influence of changes in language. These same definitive rules are found in English textbooks today. For example, most grammar texts include this definition: "a sentence is a group of words expressing a complete thought." But nowhere in the textbook will you find the definition of a "complete thought." When children are told to punctuate each complete thought, they are on their own to determine both what "complete thought" is and what "sentence" is. Furthermore, what about a word group such as "No parking from here to the corner?" Is there any question regarding completeness of thought here, and yet traditional grammarians would say that this is neither a "sentence" nor a "complete thought."

As Charles Fries (12) points out, "In the usual approach to grammatical analysis of sentences, one must know the total meaning of the utterance before beginning the analysis. The process of analysis consists almost wholly of giving technical names to portions of this total meaning."

In a research bulletin on "The Contribution of Structural Linguistics to the Teaching of Reading, Writing, and Grammar in the Elementary School," Ruth Strickland (25) hypothesizes:

1. That the unsatisfactory quality of much reading and writing in the elementary school may be due in part to lack of understanding of the true structure of English by teachers and leaders.

2. That Latin grammar superimposed on English in the eighteenth century may hinder the teaching and learning of good spoken and written English.

3. That scientific studies of the English language by structural linguistics may hold values for the elementary school.

4. That the reports of their work need to be studied analytically and synthetically by teachers.

5. That the values for elementary education inherent in this material need to be discovered by those responsible for elementary education and the language-learning process.

The English grammar taught in today's schools must be a grammar that makes statements which can be verified by an observation of the language as it is actually spoken and written. Since native speakers of English unconsciously learn the grammar of the language orally when they learn to speak, the school grammar program must utilize the new ways of analyzing the language which will lead to a conscious knowledge of its operational structure, thus enabling children to use their language more effectively in both oral and written expression.

Related Research

Various approaches for a more realistic analysis of the English language have emerged from the work of linguists. A study of the approaches reveals that although they do not totally agree, they all contain similarities. At the present time there is no consensus of what constitutes a better way to teach English because "the merits of the new analysis of grammar are widely and vigorously debated within the profession. Thus, no one can be certain what will emerge to be taught in the schools" (10). A true evaluation of the new approaches cannot be made until an on-going program can be tested.

Research in the use of the new ways to teach English grammar at the elementary school level is limited because there are so few truly

linguistically-oriented materials available at this level. Also, few elementary teachers have been educated in the use of the new teaching approaches. One recently published elementary textbook series by Paul Roberts (22) for grades three through nine utilizes transformational grammar. An experimental program has been set up which includes nineteen counties in West Virginia (29) in which the Roberts's series is being used in grades three through six. Thus far, no report on the findings of this study has been made.

Blake and Hammill (4) report on a one-year study in which one fourth- and one fifth-grade class were taught structural linguistics and were matched with another fourth- and fifth-grade section in which traditional writing instruction was given. The structural grammar program consisted of lessons constructed by the two experimental teachers and were designed to teach children how to build various sentence patterns. Pre- and post-tests consisted of writing samples from the four classes which were evaluated in terms of the number of:

1. simple sentences,
2. other kinds of sentences,
3. complete sentences,
4. incomplete sentences,
5. total sentences,
6. words in each sentence,
7. different words on the Thorndike-Lorge first 500 word list,
8. different words on their second 500 word list,
9. different words not on either list, and
10. total words in the composition. (4)

The findings indicated no noticeable gains by any of the groups on any of the tested variables having to do with sentence construction. The experimental group did considerably better on vocabulary growth.

Brieger's (6) two-year controlled study utilized a linguistically-oriented program of sector analysis with two groups of children in their fourth and fifth years. The study sought to test the effects of such a program on children's ability to analyze sentence structure; that is, to find such parts of a sentence as the subject, the predicate, and other units in the total structure. It also tried to assess carry-over from this instruction into the original compositions of the children. Two classes of similar age and ability comprised the control group who received instruction in traditional grammar. Evaluation of the program was made by pre- and post-tests requiring each group to analyze sentences--the control group using traditional techniques and the experimental group using sector analysis. Samples of the children's compositions were evaluated by a criterion measure devised by the research director. Results favored the experimental group on both ability to analyze sentence structure and in written composition.

Crews (8) directed a one-year study which sought to evaluate the carry-over of a program of sector analysis to original sentence construction focusing attention on the two aspects of sentence construction, clarity and variety. The study also carried out an in-service program for purposes of educating the twelve teachers who taught the 345 fifth-graders participating in the study. The results indicated improvement in both clarity and variety as a result of the program, and this improvement was apparent at all social class levels for both boys and girls. Since there was no control group with which to compare the participants, there is no way of knowing to what extent the progress made can be attributed to maturation or to the Hawthorne effect. Results seem to confirm that sector analysis has possibilities for an improved grammar program in the elementary grades, and they suggest the need for further study which would involve greater controls. These findings prompted the investigator to probe more deeply for further effects of sector analysis for elementary English curriculum improvement.

Mooney (16) developed some teaching units in which he utilized generative grammar and tried them out on his fourth-grade class. One of the units which covered approximately six weeks was designed to develop the idea of the sentence kernel, that kernels can be made to grow, and that each part of the kernel can consist of more than one kernel. Much of the work was done through discussion and chalkboard work sometimes drawing example sentences from other topics for incidental use. From the report it appears that no formal testing program was used to measure progress. Mooney simply reports as follows:

> I was pleased and surprised at the progress made by the group. They know as much about formal grammar as would be expected of them at this point, and they know it better. They are gaining a good sense of pattern in sentences, of the functions of words and groups of words within sentences, and perhaps might be eager to attempt all the form classes (parts of speech) earlier than usual in the curriculum because this would enable them to do a more complete job of patterning. (16)

A study done by Mellon (15) reports the effects of a program using transformational grammar and sentence-combining practice. He hypothesized that the typical rate at which the sentence structure of seventh grade student writing becomes elaborated and diversified may be enhanced by artificially enriching the student's language experience. His program consisted, for the most part, of presenting students with sets of kernel-like statements which they combine into fully-formed complex sentences. Tests in writing, reading, and intelligence were administered to the experimental group, the control group who received instruction in traditional grammar, and a so-called placebo group who received no formal grammar instruction. The written sentences of all participants were evaluated by segmenting the sentences into T-units and analyzing them according to twelve specified

factors. Results indicated that the experimental group advanced more than one year beyond that which was hypothesized for them.

Boesan (5) describes a program of six weeks instruction which she gave to second graders to help them to write structures more nearly commensurate with their oral language structures. She devised activities based on theories of structural linguistics and generative grammar which were designed to help the children to compress thought within a basic sentence and to manipulate movable elements in the sentence. Instruction emphasized these five features:

1. concepts of place, manner, time, cause, and condition expressed in a word or phrase telling where, how, when, why, or if,
2. connective words or prepositions,
3. prepositions and adverbial phrases,
4. incorporation of single words to increase discrimination or of phrases denoting place, manner, time, cause, and condition within a simple, active, declarative sentence,
5. manipulation of single words and phrases, with basic sentence patterns.

Pre- and post-instruction samples were examined and evaluated in terms of the five features emphasized in instruction. Post-instruction samples contained more than three times as many movable elements in expanded sentences as pre-instruction samples.

No studies were found reported at the elementary level which were concerned with measuring correlation between reading comprehension and knowledge of basic sentence elements. O'Donnell (18) reports a study which was done with high school seniors and which attempted to determine whether there is a higher correlation between reading comprehension and awareness of structural relationships of words in sentences than there is between reading comprehension and ability to verbalize grammatical rules and terminology. A test was constructed to measure ability to recognize the relationship between basic structural relationships of words in sentences. Standardized tests were administered to measure reading comprehension and grammar. Correlation between scores on the reading comprehension test and each of the other two tests was computed. On the basis of the findings, it was concluded that ability in reading comprehension is about equally related to awareness of grammatical structure and ability to verbalize knowledge of traditional grammar. Thus, the findings give no conclusive evidence to support the teaching of structural linguistics as a major means of developing reading comprehension.

Thus, research which attempts to assess new approaches to teaching English grammar at the elementary school level is scanty and as yet provides no real basis for making any conclusive claims for its having greater practical value than traditional programs.

Limits of the Study

In 1958 Pooley outlined a cumulative program in grammar for grades one through twelve. He proposed the following for grades one through six:

> No structural grammar to be taught at this level. Sentences may be referred to as such and the terms subject and verb employed if the teacher so wishes, but without formal instruction and without testing. In these grades the emphasis placed upon good usage habits and the constant practice of writing will bear fruit in better composition in grades beyond. (21)

Pooley was referring to a grammar program taught by traditional method, and he was, no doubt, taking seriously the research which substantiates such a statement. However, there is little evidence that textbook writers and teachers in the elementary school have accepted this fact. With this in mind, the investigator has been seeking "a better way" to teach English grammar at all levels; and has become interested in the possibilities of linguistic theories and approaches for an effective replacement of the present school grammar program.

Sector analysis, an approach to teaching the grammar of written English developed by Robert L. Allen (2) of Teachers College, Columbia University, seemed to this writer to offer the most for an intermediate-grade grammar program. The writer's decision to adapt Allen's program to an intermediate-grade level was based on the following:

1. It relates the language which children use in their everyday lives to the language used for more formal occasions. Thus, the grammar attempts to describe the language as it is rather than to prescribe what the language should be.

2. The grammar is basically derived from tagmemic analysis, but it utilizes that which is useful from transformational and structural grammar.

3. The terminology is simple and descriptive of the concepts it represents. Thus, children are not confused with complicated and cumbersome formulas.

4. The specific concepts are categorized in such a way that children are able to understand the relationship of one to another.

5. The approach utilizes inductive procedures for teaching. The children are given opportunities to observe language in use and to make generalizations about what they observe.

6. The activities and exercises which are suitable for this approach to studying grammar are not artificial, since they provide opportunities for the children to draw inferences from the knowledge that they are gaining about the grammar of their language.

Thus, this project explored a linguistically-oriented program of English grammar with fourth grade children. It was based almost totally on the theories and ideas of sector analysis; however, where compatible, ideas of other linguistically-oriented approaches were utilized. The grammar materials used were substituted for traditional grammar. All other activities presently included in a language arts program were continued and, whenever possible, an effort was made to show a relationship between the language understandings taught through the experimental program with other areas of the language arts curriculum.

The length of the study was limited to the months of October through May of the academic year 1967-68. The class periods for instruction amounted to approximately forty-five minutes per day, three times per week.

All the teachers participating did so on a voluntary basis. The experimental teachers were in accord that they would like to see improvement in their own teaching of grammar, and they were eager to try the new approach.

The study sought to measure the effects of the experimental program on children's ability to write sentences which show greater variety in structure. It was not concerned with developing children's organization in writing a whole composition. It further sought to determine if this program would improve one aspect of reading--silent reading comprehension.

Objectives

The specific objectives of this study were as follows:

1. Will fourth-grade children who receive instruction in sector analysis 45 minutes per day, three days a week from October through May, write sentences showing greater variety in structure than will a comparable group who receive instruction in traditional grammar?

2. Will children's knowledge of basic sentence parts and their organization as taught in this program improve their comprehension in silent reading, as measured by the vocabulary and comprehension sections of the Gates-Mac Ginitie Reading Tests more than the improvement in comprehension of a comparable group taught traditional grammar?

CHAPTER TWO

METHOD

Selection of the Participants

The children participating in this study were randomly selected and randomly assigned to control and experimental classes so as to comprise a representative sample within the normal fourth grade age and ability range in the public schools. The sample included 53 girls and 57 boys assigned to the control group, and 47 girls and 68 boys assigned to the experimental group.

The schools selected represented urban, sub-urban, and rural areas of Florida. They were matched on the basis of size and socio-economic levels represented and included both Negro and Caucasian children. The individual schools could be described as follows:

1. Schools A (Exp) and B (Con): contained grades K-12, predominately white population, located in small, rural, farming towns. Low to moderate socio-economic status.

2. Schools C (Exp) and D (Con): contained elementary grades, all Negro population, located in urban area of Jacksonville. Low to moderate socio-economic status.

3. Schools E (Exp) and F (Con): contained elementary grades, all white population, located in suburban area of Jacksonville, low middle to upper middle class status.

4. Schools G (Exp) and H (Con): contained elementary grades, integrated population, located in Gainesville. Classroom used in School G was well-integrated; in School H, class was predominately white. Essentially low middle to upper middle class status.

All of the teachers of both the experimental and control groups participated voluntarily and were recommended by their local principals. Each appeared to have relatively equal amounts of enthusiasm in support for the approach she used in teaching grammar.

Those who taught the experimental group had expressed discontent with their present grammar teaching approach and had indicated an interest in learning modern grammar and in trying it in the classroom. These teachers were given instruction in the basic understandings needed for teaching the new materials by the principal investigator who explained the prepared worksheets (7) and the two workbooks used: A Linguistic Approach to Writing, Discovery 1 and Discovery 2 (1). The work sessions with the experimental teachers were held intermittently throughout the year. They were informal and provided time for expressing reactions to the materials as they used them.

The teachers in the control group had reasonably good background in training in traditional grammar. The teacher in School B was a long-standing and firm believer in traditional grammar. The teachers in Schools D and F had a reasonable amount of confidence in their program. In School F, the teacher had had one course in modern English grammar at a local university.

A few words should be said about the teachers in Schools G and H. In the project proposal the investigator had planned to teach two classes, one in the control group and one in the experimental group, in the same school. In a matter of days after the project started, it appeared to the investigator from observation of children's responses that the ability level and the performance level of the proposed experimental group was not as high as the control group. Also, the control class seemed to be able to adjust to working with an outsider coming in to teach the grammar lessons much better than the proposed experimental class. Three weeks after the project was started, a comparable class from another school taught by another teacher was selected and was used as a class in the control group. The investigator then began teaching the experimental program to the class that had originally been chosen for a class in the control group. It should be noted that the teacher of the control class had less experience and training than the investigator. However, it should be recognized that the control-class teacher had the advantage of being in a self-contained classroom, and her students did not have the problem of adjusting to another teacher's coming in to teach the grammar lessons. Thus, the program could be better integrated into the total day's work. It was believed that perhaps this compensated for the differences cited.

The investigator continued to carry on the work with the class that had initially been tapped for the experimental program, but the results are not reported as a part of this experiment.

The teachers in the study received no remuneration for their participation in the study, and they are to be commended for the conscientious and effective way they fulfilled the year's commitment. All of the teachers were women. The professional training and experience of these teachers is summarized in Table 1.

Table 1

Academic Degrees and Prior Experience
of Participating Teachers

School	Group	Degree(s) Held	Years of Experience
A	Exp	B.A.	4
B	Con	B.S.; M.S.	18
C (1)	Exp	B.A.; M.Ed.	17
(2)	Exp	B.S.	7
D (1)	Con	B.S.	18
(2)	Con	B.S.	12
E	Exp	B.S.	
		M.Ed. near completion	7
F	Con	B.S.	4
		M.Ed. in progress	
G	Exp	B.A.; M.S.; Ed.D.	17
H	Con	B.A.E.; M.Ed. near completion	4

The Treatments

All of the classes devoted approximately forty-five minutes per day three days per week to the respective treatments in grammar instruction. The texts used in the experimental program were A Linguistic Approach to Writing Discovery 1 and Discovery 2 by Robert L. Allen and others (1). Additional worksheets were provided by the investigator. Many opportunities were provided for the children to write, and the teachers were given a copy of Slithery Snakes and Other Aids to Children's Writing by Petty and Bowen (19), for suggestions in guiding children's creative writing. Films without dialogue were provided from time to time for the children to view and write about. Appendix A contains a brief description of the content of the course and a list of the titles of the films viewed for writing experiences. The classes in the experimental group were also given a kit of games (13) which were to be used for some work in word structure to improve word recognition skills. However, only two weeks were remaining in the study when these kits arrived and could hardly be accredited with any changes that may have taken place in word recognition.

The control group used for the most part the state adopted grammar textbook On the Trail to Good English (24) which they supplemented with additional activities and worksheets from various traditional-type workbooks. Also, they provided opportunities for children

to have varied experiences with written composition. In School F, the teacher used the fourth grade level text from the Roberts Series (22). However, the grammar treatment in this particular textbook of the series and the other activities that she provided did not differ to any great extent from those used in the other classes in the control group.

Reading instruction in all the classes of both the control group and the experimental group followed essentially a basal reading program with grouping within the classroom based on performance. Attempts were made to provide ability level books and materials for individualizing instruction whenever possible.

Procedure

As a means of evaluating children's progress in reading comprehension, the Gates-MacGinitie Reading Tests Survey D, Form 1 was administered as a pre-test and Form 2 was used as a post-test.

For purposes of this study, the term "variety in structure" refers to diversification of sentence structure as evidenced by the child's ability to rearrange the various shiftable units or sectors into different positions in relation to the basic sentence parts. Thus, a child would achieve variety in structure in writing a story by arranging the shiftable units or sectors in the first sentence in his story one way, by rearranging these sectors another way in the next sentence, and still another way in the following sentence, and so on.

As a means of determining the children's growth in writing sentences which have variety in structure, a writing sample was elicited from each child at the beginning and again at the conclusion of the study. As a stimulus for each of these two writing sessions, the children viewed a film that had no dialogue. They were told to follow the action in the story and to listen to the background music. At the conclusion of the film,,they were told to write a story of what they saw in the film or to use any idea they got from the film to write a story. They were to write the very best sentences that they could. Twenty minutes was allowed for writing. The first film used was Hunter in the Forest. In Schools G and H, another film without dialogue entitled Rock in the Road was used for the final writing session. All other schools viewed Corral and wrote their final story.

Arriving at an objective measuring device to evaluate growth in variety in structure presented somewhat of a problem. In a previous study which was similar to this one and was directed by the investigator, the children's (fifth-graders) writing samples were analyzed by An Index for Analyzing Variety in Sentence Structure. This device was prepared by the investigator, but even at the time it was used, the investigator felt somewhat dissatisfied with it. The main criticisms she felt were that it rewarded the child for being wordy and that the numerical score

was a somewhat nebulous description of quality in sentence construction. When application of this Index was made to the fourth-graders' sentences in the first writing samples, it became somewhat of a problem to determine what a sentence was by fourth-grade standards. Certain children of this age simply do not use periods, and they tend to use numerous and's and then's where older children would use periods. In some cases, the entire story was one huge sentence if one defines a sentence as whatever is written between terminal marks. It was soon obvious that a fair evaluation of the number and quality of shiftable units used would be difficult to identify in many cases. Therefore, the investigator turned to a study by Hunt (14) in which he describes a means of segmenting a piece of writing into "minimal terminal units" which he calls "T-units." A T-unit is simply one main clause or a subject and a finite verb sometimes expanded by structures that are modifiers or complements. "Each unit is grammatically capable of being considered a sentence," according to Hunt. His study further points to evidence which supports the belief that the length of the T-unit is a more reliable measure of maturity in writing than the length of a sentence.

Therefore, all of the writing samples of the children were cut up into T-units, and the mean length of the T-units was computed for each student. Then each T-unit was analyzed to determine which and how many of the sectors that the experimental group were taught to identify and construct were used in the writing samples. For each of the sectors used, the children were given a numerical point. A list of the sectors for which the child received points follows:

Front and End shifters: a single word or word group usually called a sentence adverbial which is shiftable from the beginning to the end or from the end to the beginning of a sentence. Example: Once a hunter went hunting. "Once" is a Front shifter and is shiftable to the End of the sentence.

Subject cluster: a subject of more than one word or more than one word and an article. A subject such as "another old man" would receive a point; whereas, "a man" would not.

Complement cluster: a complement of more than one word or one word and an article. Example: He didn't shoot the baby deer. "The baby deer" would receive a point; whereas, "the deer" would not.

Prepositional Phrase: any word group beginning with a preposition and having an object. Example: through the woods.

Phrase inside phrase: a cluster containing more than one phrase. Example: The hunter went down the path through the woods. "Down the path through the woods" would be classified as a phrase inside phrase.

Middle adverb: an adverb which can bome between an auxiliary and a main verb and which is shiftable. Example: He has already shot a quail. "Already" is shiftable to read, "He already has shot a quail."

Joiner: a word such as and, but, so, or or used to join two words or two related ideas. Because of fourth-graders' tendency to overuse joiners, the investigator was careful to give points only when the joiner actually was needed to make the ideas connected. Rarely was an "and" or "and then" which appeared at the beginning of a T-unit given a point.

One-and-a-half Sentence: a way of joining sentences containing -ing verbs by cutting the sentence just before the -ing verb and adding a completely new sentence. Example: The hunter was/walking through the woods. Walking through the woods, the hunter stopped and shot a deer.

Clause: a T-unit beginning with such words as "that," "which," "because," "until," and so on.

Direct instruction in all of these sectors except clauses was included in the program. For further clarification, a brief description of the experimental program is included in "Precis of the Teaching Materials" in Appendix A. A point was given for using a clause because the children were encouraged to expand various sentence parts by telling what, when, where, why, and how. Some children did this by adding clauses. Although the term "clause" was never used, children were somewhat indirectly taught the idea and how to develop such.

In addition to arriving at a total variety score, a frequency count was made of the number of different kinds of sectors which appeared in the sentences.

In summary, each writing sample was analyzed by segmenting the total writing into T-units. A mean T-unit length and a total variety score was computed. A frequency count of the various sectors used was also made.

CHAPTER THREE

RESULTS

The two questions raised about the linguistically-oriented grammar program used in the fourth-grade classes were (1) would children improve their ability to construct sentences which show variety in structure, and (2) would they improve comprehension in silent reading? Samples of writing were collected from all children and were analyzed to answer the first question. The vocabulary and comprehension scores on the Gates-MacGinitie Reading Tests, Survey D were collected to answer the second question.

It was believed that most children would have in their accumulative folders a Lorge-Thorndike Intelligence Test score given the year prior to the study. This was not the case, so the use of intelligence tests was dropped from the project because of the difference in intelligence tests used, time of testing, and number of children who would have to be tested.

Since before and after scores were available on all children on the sentence analysis (T-unit length and variety in structure) and on reading (vocabulary and comprehension), all data were analyzed by individual change scores ($X_i - X_f$) where X_i is the initial score and X_f is the final score. Children's t-scores were calculated for (a) changes by all classes, before and after, (b) changes between pairs of experimental and control classes, and (c) changes between all experimental children and all control children on (1) T-unit length, (2) variety in structure, (3) vocabulary, and (4) comprehension. A T-unit is defined as one main clause or a subject and a finite verb sometimes expanded by modifiers or complements. The experimental-control pairs were randomly selected and assigned from different schools serving comparable groups.

Data from the Writing Samples

The hypothesis to be tested, in null form, on the analysis of the writing samples was:

There is no difference in changes on scores measuring variety in structure between sentences in the writing samples of children in the experimental group and sentences in the writing samples of children in the control group.

The analysis of sentences to determine variety in structure was made by separating the total story into T-units and then taking a frequency count on all sectors that were taught in the experimental program that appeared in the T-units. In cases where front, end, and joiners (three sectors taught in the experimental program) were used, they had to be identified as to their association with the T-unit next to them.

Finally, a frequency count of the sectors used for each story was totaled, thus producing a score called variety in structure. Since the investigator was interested in seeing if T-unit length increased from pre- to post-test, changes in T-unit length were also computed.

Table 2

Gains in Scores in the Sentence Structure of Children's Writing Samples

School	N	$\bar{X}$	t	p
A (Exp)				
T-Unit Length	22	.35	1.60	< .20
Variety in Structure	22	-1.05	-1.06	> .20
B (Con)				
T-Unit Length	15	.84	1.59	< .20
Variety in Structure	15	5.20	5.43	< .001
C(1) (Exp)				
T-Unit Length	24	2.90	4.66	< .001
Variety in Structure	24	10.58	7.29	< .001
D(1) (Con)				
T-Unit Length	28	.65	2.10	< .05
Variety in Structure	28	7.43	7.05	< .001
C(2) (Exp)				
T-Unit Length	22	1.89	2.23	< .05
Variety in Structure	22	8.91	4.52	< .001
D(2) (Con)				
T-Unit Length	15	1.71	3.45	< .01
Variety in Structure	15	5.93	4.51	< .001
E (Exp)				
T-Unit Length	23	.46	1.84	< .10
Variety in Structure	23	17.83	11.41	< .001
F (Con)				
T-Unit Length	27	.044	.16	> .20
Variety in Structure	27	1.78	1.27	> .20
G (Exp)				
T-Unit Length	22	1.10	2.86	< .01
Variety in Structure	22	11.68	5.50	< .001
H (Con)				
T-Unit Length	25	.72	1.85	< .10
Variety in Structure	25	5.36	2.60	< .02

Gains in scores in T-unit length as reported in Table 2 indicate that only one class (School C(1)) in the experimental group had an increase which reached significance at the .001 level of confidence, and two groups (D(2) and G), one an experimental and one a control class, had an increase in T-unit length which was significant at the $<.01$ level.

Scores in variety in structure reached significance at the .001 level in four classes in the experimental group (Schools C(1), C(2), E, and G) and in three classes in the control group (Schools B, D(1), and D(2)).

Table 3

A Comparison of Changes in Sentence Structure Between Pairs of Classes

School	d.f.	$\bar{X}_e - \bar{X}_c$	t	p
A(Exp) and B (Con)				
T-Unit Length	35	-.49	-.87	$>.20$
Variety in Structure	35	-6.25	-4.49	$<.001$
C(1) (Exp) and D(1)(Con)				
T-Unit Length	50	2.25	3.23	$<.01$
Variety in Structure	50	3.15	1.70	$<.10$
C(2) (Exp) and D(2)(Con)				
T-Unit Length	35	.17	.18	$>.20$
Variety in Structure	35	2.98	1.26	$>.20$
E (Exp) and F (Con)				
T-Unit Length	48	.41	1.10	$>.20$
Variety in Structure	48	16.05	7.67	$<.001$
G (Exp) and H (Con)				
T-Unit Length	45	.38	.69	$>.20$
Variety in Structure	45	6.32	2.13	$<.05$

Changes in the T-unit length between pairs of classes favored only one experimental class at the $<.01$ level. Gains in variety in structure favored at the $<.001$ level the control class when comparing Schools A and B and the experimental class when comparing Schools E and F, as reported in Table 3. In one pair of classes (Schools G and H) the experimental class was favored at the $<.05$ level.

Table 4

Changes in Sentence Structure Between
Experimental and Control Groups

	d.f.	$\bar{X}_e - \bar{X}_c$	t	p
T-Unit Length	221	.66	1.02	$>.20$
Variety in Structure	221	4.61	4.37	$<.001$

Table 4 reports a comparison of the changes in the sentence structure of all children in the experimental group with those in the control group. Since changes in the variety in structure reached significance at the $<.001$ level of confidence favoring the experimental group, the null hypothesis being tested was rejected.

It should be noted that significant gains in variety in structure were made by seven out of the ten classes involved in the study. One cannot discredit the fact that the excitement and enthusiasm of being a part of a research study often serves as a stimulant to those participating. Therefore, one cannot fail to take into consideration the presence of the Hawthorne effect. Furthermore, there is no way of knowing how much the progress made by these children can be attributed to maturation. On the other hand, since emphasis was placed in both groups on providing children with a variety of opportunities to write original compositions, it would appear that the very act of writing, in and of itself, could have contributed to gains in sentence variety, no matter what the grammar treatment.

The investigator also observed as she analyzed the writing samples that in many cases, noticeably in the rural and urban populated schools, the children displayed poor handwriting and spelling skills. This was particularly true in the pre-test. Although there was evidence that these skills had improved considerably in the post-test, perhaps the time spent in a structured grammar program could have been better used at this level with this type of child in an extended and more thorough program which develops such skills as listening, speaking, and others related to and prerequisite to reading and writing.

Data from the Gates-MacGinitie Reading Tests

It has been predicted by some, especially linguists, that reading comprehension will most likely improve if children are taught something about the organization of the basic units within the total sentence. Thus, the hypothesis to be tested on the Gates-MacGinitie Reading Tests, Level D, was:

There is no difference in changes made in reading comprehension, as evidenced by the Gates-MacGinitie Reading Tests, Level D, between children in the experimental group and children in the control group.

Because knowledge of vocabulary is so closely related to level of comprehension, gains on both vocabulary scores and comprehension scores were computed.

Table 5

Gains Made in Scores on the Gates-MacGinitie Reading Tests

School	N	$\bar{X}$	t	p
A (Exp)				
Vocabulary	23	.65	.65	$>.20$
Comprehension	23	4.48	4.15	$<.001$
B (Con)				
Vocabulary	16	2.75	2.56	$<.05$
Comprehension	16	4.31	3.73	$<.01$
C(1) (Exp)				
Vocabulary	23	3.09	3.75	$<.01$
Comprehension	23	1.74	.97	$>.20$
D(1) (Con)				
Vocabulary	30	3.57	3.66	$<.001$
Comprehension	29	6.13	6.41	$<.001$
C(2) (Exp)				
Vocabulary	22	-3.73	-3.39	$<.01$
Comprehension	22	2.27	2.35	$<.05$
D(2) (Con)				
Vocabulary	18	3.17	2.64	$<.02$
Comprehension	18	4.28	3.38	$<.01$
E (Exp)				
Vocabulary	28	3.71	4.66	$<.001$
Comprehension	28	2.54	2.84	$<.01$
F (Con)				
Vocabulary	30	4.23	5.00	$<.001$
Comprehension	30	5.23	5.45	$<.001$
G (Exp)				
Vocabulary	24	.54	.67	$>.20$
Comprehension	24	1.00	.65	$>.20$
H (Exp)				
Vocabulary	30	2.00	2.83	$<.01$
Comprehension	30	2.63	2.37	$<.05$

Table 5 reports a significant gain on vocabulary for one experimental class (School E) at $<.001$ level and three experimental classes (Schools C(1), C(2), and H) at the $<.01$ level. For the control group two classes (Schools D(1) and F) made gains reaching significance at the $<.001$ level.

On the comprehension test one experimental class (School A) and two control classes (Schools D(1) and F) made significant gains at the $<.001$ level, and one experimental class (School E) and two control classes (Schools B and D(2)) made significant gains at the $<.01$ level.

Table 6

A Comparison of Changes in Reading Between Pairs of Classes

School	d.f.	$\bar{X}_e - \bar{X}_c$	t	p
A(Exp) and B(Con)				
Vocabulary	37	-2.10	-1.42	$<.20$
Comprehension	37	- .17	- .10	$>.20$
C(Exp) and D(Con)				
Vocabulary	51	- .48	- .38	$>.20$
Comprehension	50	-4.39	-2.16	$<.05$
C(2)(Exp) and D(2)(Con)				
Vocabulary	38	-6.90	-4.24	$<.001$
Comprehension	38	-2.005	-1.26	$>.20$
E(Exp) and F(Con)				
Vocabulary	56	- .52	- .45	$>.20$
Comprehension	56	-2.69	-2.05	$<.05$
G(Exp) and H(Con)				
Vocabulary	52	-1.46	-1.36	$>.20$
Comprehension	52	-1.63	.86	$>.20$

A comparison of pairs of experimental and control classes as reported in Table 6 indicates that gains in vocabulary favored one control class (School D(2)) significantly at $<.001$ level, and gains in comprehension favored two control classes at the $<.05$ level.

Table 7

Changes in Reading Between Experimental and Control Groups

	d.f.	$\bar{X}_e - \bar{X}_c$	t	p
Vocabulary	242	-2.18	-3.49	$<.001$
Comprehension	241	-2.18	-2.87	$<.01$

Gains in reading test scores for all children in the experimental and control groups are reported in Table 7. Since the difference found for combined groups in vocabulary was significant at the $<.001$ level favoring the control group and in comprehension at the $<.01$ level favoring the control group the null hypothesis is rejected.

Writing Samples Representative of Social Class Areas

Further evidence of the change in variety in sentence structure may be seen by looking at writing samples which were randomly selected, one pair (experimental class and control class) from each of the three social class areas--rural, urban, and suburban--represented in the study. There were other children participating whose sentence showed less improvement or greater improvement than those included in the samples here. Usage and spelling have been left as written by the children.

Rural Area, Experimental Class

Pre-test

One early morning the hunter went hunting. He saw birds. He shot one. He got it. He picked a feather. He went to the river. He saw deer run through the water. He went to the next water hole. He saw 2 deers. He coaked his gun. He was ready to shoot when he took a good look and saw a fawn. He took down his gun and went home.

Post-test

One day there was this cowboy. He went out on his horse to round up some wild horses. He got one that had a white stripe on his head and white front feet. When he let the rest of the horses go, King Horse wanted to go too. He ran in the water. Then he stopped in the middle of the field and the man patted him. And King Horse ran on like a tame horse.

Rural Area, Control Class

Pre-test

The birds was running. One deer was running. Squirrells was running too. There were pretty flowers. They was a mother, father, and baby.

Post-test

Bill rode out on the planes. He was looking for horses. He rode up on a hill. Bill looked all over the place.. Then he looked down in the valley and saw some pretty horses. He unsaddled his horse. He tried to get on, but the horse read up. When I got on, he took off. Bill tried to stop him but he could not stop him. Then at last he stopped him. They they rode off. The horse was trained. Bill Thompson trained him. He named him Jim.

Urban Area, Experimental Class

Pre-test

I saw a man going in the woods and he killed a bird. He started to shoot some reindeer. But he thought the reindeer are nice and friendly. I think the story was nice to see.

Post-test

One day there was a man riding on his horse. He saw some other horses out there in the field. He went down there to put them in the corral. He got off his horse and got another horse out of the corral. He got all his things and left. He tried to get on the horse but the horse kept moving away from him. Then when the horse stopped, he got on it. Then they left. The horse was running fast. When they got down there by the water, they stopped. Then they left again and went far away with the horse he was on.

Urban Area, Control Class

Pre-test

Why did the man shoot the turkey? The man did not shoot the deer. What was he going to do with the net?

Post-test

I saw a film. It was very exciting. It was about a corral. The horses were grazing on the prarie. A man and a dog corralled them. They drove them right in the corral and the man put up the fence. And the dog went running off and the man got on his horse and rode off. The man went far across the praire and we never seen the man or dog again. The grass looked very green.

Suburban Area, Experimental Class

Pre-test

Once a hunter went in the woods with a gun. He went and saw a bird and killed it, and pulled a feather out of it and put it in his hat, and walked on.

Then he saw two deer with it's young. He did not shoot them. Then he started walking home.

Post-test

Once there was a ranch in Mexico. Riding along on a horse, a man went along. The man was Aro-Cabillyo. As a ranger he had a hard time because he had to make sure there were no cattle-stealers. He had a horse and a dog. Payro was his dog and Maylo was his horse. Since it was so big of an area his work was from dust to dawn.

Now he needed a horse so he went to the Canyon to herd them with his dog Payro and his horse Maylo. Riding along the rim of the Canyon Aro-Cabillyo spotted them. Finally he got down to the valley and started herding.

He herded them to the corral. He saw one he wanted. Trotting in he started the lassoing. Finally he got one and got the rein on the horse. Then he got the saddle on and after a hard time he mounted and started full speed and off he went.

Suburban Area, Control Class

Pre-test

Once there was a hunter walking in the woods. The hunter saw a bird and shot it. Then he walked up to it and pulled a feather out of its tail. Then he walked on. He saw some deer. He was about to shoot it till he saw.

Post-test

"That horse is a good one," said Jim. "I think I'll train him." Jim is a man who rounds up horses. Then he brakes them in. Before he brakes them in he has to catch them, saddle them, and then he rides them.

It is perhaps worth noting that the teacher walkout which occurred during this study may have had some effect on the results. The majority of the teachers of both experimental and control classes did walk out but for different lengths of time. Provision was made in the timing of the program so that all classes could receive equal time in instruction. School A was in a community where the public strongly objected to the walk-out, and the teacher of this class reported that she saw evidence of carry-over into class performance on all subjects. Paired with this school was School B, where there also was animosity against the walk-out, but the teacher of this class did not walk out. Any judgment made in regard to the effects of the actions and attitudes surrounding the teacher walk-out as having influence on children's performance in the schools cited or any of the classes would be pure speculation. There no doubt were some effects, however.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

This study sought to compare the effects of a grammar program utilizing a linguistically-oriented approach with one using a traditional approach as measured by the fourth grade participants' performances in (1) construction of sentences which show variety in structure, and (2) comprehension of silent reading on the Gates-MacGinitie Reading Tests, Level D.

Conclusions

On the basis of the results of this study as stated in the previous chapter, these conclusions are made:

(1) Fourth grade children seem to be able to put to practical use in sentence construction the understandings derived from a study of grammar that focuses on identification and use of specific basic sentence sectors when this study is related to the way children use language in their everyday lives.

(2) Language understandings seem to mean more to fourth graders when they are presented by inductive, step-by-step procedures and are immediately followed by activities which provide opportunities for practical application of the understandings taught.

(3) The level and the ability to apply these understandings in constructing written sentences appear to be related to the level of oral language development of the children.

(4) Providing fourth grade children with numerous and varied opportunities for written expression seems to result in some improvement in written sentence construction no matter what approach the grammar program utilizes.

(5) The teaching of English sentence structure as was taught in this experimental program appears to contribute no more to silent reading comprehension in fourth grade as measured by the Gates-MacGinitie Reading Tests, Level D, than a traditional grammar program.

Implications and Recommendations

Linguists have been calling attention to the fact that children come to school already possessing varying degrees of knowledge about the grammar of their language, but that this knowledge is at an unconscious level and has developed as one learns to communicate with those in his environment. Since many children come to the public schools

from backgrounds where methods of communication are so-called "non-standard," this language knowledge is often found unacceptable, and the child must learn to use the more standard "school language."

Recommendation #1: If the school grammar program relates the learning of sentence structure to the language the children already know and use in their everyday lives, as did this program, the study of grammar can have greater practical value. Furthermore, the program should utilize activities which provide for some sequence in language development.

That language is primarily spoken and that the development of competence in speaking precedes the development of competence in writing is another fact accepted by linguists. English educators appear to agree on this point verbally. Evidence to this agreement is seen when one hears educators describe the language arts program for primary grades as one which consists of numerous and varied experiences in listening and speaking planned to precede and accompany experiences in reading writing. If this is accepted as true for primary children, it appears that emphasis on such a program should be continued for those whose use of standard language has not developed by the end of the primary years. Evidence favoring a need for an extension of such a program was seen repeatedly during this study.

Recommendation #2: A structured program in grammar, whether it utilizes a linguistic approach or a traditional approach, should be delayed until children have developed facility with listening and speaking skills. Furthermore, this recommendation could be extended to state that structured programs in reading and writing could well be delayed until children are better developed in the use of listening and speaking skills.

Few conclusions can be made which are based only on a one-year experimental program in the use of a new way to teach grammar.

Recommendation #3: The findings in this study suggest to the investigator the need for future studies which could be longitudinal utilizing a sequential program such as was attempted in this study in order to make a complete evaluation of its effects on elementary grade school children.

Closely associated with the need for further study of the effects of a new grammar program is the problem of teacher preparation. Evidence of enthusiasm of the teachers involved in this experimental study and a similar one previously directed by the investigator (8) has implications for pre-service and in-service education programs.

Recommendation #4: Provision must be made for providing the type of background preparation in content and methodology for teachers which will give them the sound understandings for teaching new ways of analyzing language.

This problem is especially acute because the traditional teaching of grammar has been held so dear for so long that new ways of thinking and new attitudes about language must be learned along with the new content and approaches for teaching the subject.

REFERENCES

1. Allen, Robert L., et al. A Linguistic Approach to Writing Discovery 1 and Discovery 2. Experimental edition, New York: Noble and Noble Publishers, Inc., 1967.

2. _____. A Summary of the Structure of the English Sentence. New York: Teachers College, Columbia University, 1964.

3. Barnett, W. W. "A Study of the Effects of Sentence Diagraming on English Correctness and Silent Reading Ability." Unpublished Master's Thesis, State University of Iowa, 1942.

4. Blake, Howard E. and Hammill, Donald D. "Structural Linguistics and Children's Writing." Elementary English, XLIV (March, 1967), 275-278.

5. Boesen, Sister Mary Theodore. "Developing Maturity in Writing." The Instructor, LXXV, No.7 (March, 1966), 103.

6. Breiger, Arthur R. "An Application of Sector Analysis to the Teaching of English in the Intermediate Grades." Unpublished Ed.D. Project, Teachers College, Columbia University, 1966.

7. Crews, Ruthellen. Modern English Grammar: A Linguistic Approach (preliminary edition, mimeographed).

8. _____. "A Study in the Use of Sector Analysis As An Approach to Teaching Fifth-Grade Students Certain Aspects of English Sentence Structure." Unpublished Ed.D. Project, Teachers College, Columbia University, 1966.

9. DeBoer, John J. "Grammar in Language Teaching." Children's Writing: Research in Composition and Related Skills. Champaign, Illinois: National Council of Teachers of English, 1960-61.

10. Footlick, Jerrold K. "A Mood of Reform in the Schools and the Emerging 'New English'." The National Observer. IV (July 19, 1965), 12.

11. Francis, W. Nelson. "Revolution in Grammar." Readings in Applied Linguistics. ed. Harold B. Allen, 2d. ed. New York: Appleton-Century-Crofts, 1964.

12. Fries, Charles C. The Structure of English. New York: Harcourt, Brace and World, Inc., 1952.

13. Heilman, Arthur, et al. Phonics We Use Learning Games Kit. Chicago: Lyons and Carnahan, 1968.

14. Hunt, Kellogg W. Grammatical Structures Written at Three Grade Levels. Champaign, Illinois: National Council of Teachers of English, 1965.

15. Mellon, John. Transformational Sentence Combining A Method for Enhancing the Development of Syntactic Fluency in English Composition. Cambridge: Harvard University, 1967. Project No.5-8418, Cooperative Research Program, Office of Education, U. S. Department of Health, Education, and Welfare.

16. Mooney, Patrick. "Generative Grammar in Grade 4." Catholic School Journal. 66 (March, 1966), 61-63.

17. Morine, Harold. "A Proposal for the Teaching of Linguistics in Grades Four, Five, and Six." Unpublished Ed.D. Project, Teachers College, Columbia University, 1962.

18. O'Donnell, Roy C. "A Study of the Correlation Between Awareness of Structural Relationships in English and Ability in Reading Comprehension." Journal of Experimental Education. 31 (March, 1963), 313-316.

19. Petty, Walter and Bowen, Mary E. Slithery Snakes and Other Aids to Children's Writing. New York: Appleton-Century-Crofts, 1967.

20. Pike, Kenneth L. "Language--Where Science and Poetry Meet." College English, XXVI (January, 1965), 282-285.

21. Pooley, Robert. Teaching English Grammar. New York: Appleton-Century-Crofts, 1957.

22. Pooley, Robert C. "What Grammar Shall I Teach." The English Journal. XLVII. No.6 (September, 1958), 326-328.

23. Roberts, Paul. The Roberts English Series: A Linguistic Program, Grades 3 - 9. New York: Harcourt, Brace and World, 1966.

24. Shane, Harold, et al. On the Trail to Good English. River Forest, Illinois: Laidlaw Bros., 1958.

25. Shane, Harold G. Linguistics and the Classroom Teacher. Washington: Association for Supervision and Curriculum Development, 1967.

26. Strickland, Ruth G. "The Contributions of Structural Linguistics to the Teaching of Reading, Writing, and Grammar in the Elementary School." Bulletin of the School of Education. Bloomington: Indiana University. 40 (January, 1964), 2-3.

27. Strom, Ingred. "Research in Grammar and Usage and Its Implications for Teaching Writing." Bulletin of the School of Education. Bloomington: Indiana University, 36 (September, 1960), Chapter VI.

28. Thomas, Owen. "Grammatici Certant," Linguistics in the Classroom. Champaign, Illinois: National Council of Teachers of English, 1963.

29. West Virginia State Department of Education. "Linguistics Program," 1966 Curriculum Projects in English. Champaign, Illinois: National Council of Teachers of English, 1966.

APPENDIX A

PRECIS OF THE TEACHING MATERIALS

The teaching materials used with the experimental group in this study were essentially those included in two workbooks entitled, A Linguistic Approach to Writing, Discovery 1 and Discovery 2, by Robert L. Allen and others (1). Additional worksheets were devised by the investigator and duplicated in classroom quantities and were presented in the work sessions with the teachers. The grammar presented in these materials describes language through an analysis of the syntax of written English. It is basically a structural analysis, but it utilizes some of the principles of transformational grammar. It also corresponds rather closely to a theory of the nature of language which is called tagmemics. According to Pike, (20) the originator of tagmemics theory, a tagmeme is defined as:

> . . . a combination of a structural function (such as subject, or object, or transitive predicate, or locational component of a clause) with the set of alternatives (noun phrases, transitive verb phrases, locative phrases) which can "carry" or "represent" that function. (20)

The concepts of grammar included in this experimental program were presented in Discovery 1 and worksheets in order as follows:

Lesson One: "Different Kinds of English"

The word "linguist" is introduced as a person who observes people as they use language and attempts to describe language as it is used. An attempt is made to help children listen to hear the differences between informal language of conversation and the more formal language used in writing. The terms "Spoken English" and "School English" are introduced and differences in the sentence structure of these two kinds of English are pointed out.

Lesson Two: "X Words and the Two X Positions"

Demonstration of the fact that there is order in written sentence structure is carried out here. The importance of recognizing the positions of words in the total sentence is emphasized. The function of the X and shifted X positions are introduced, and children are able to identify words that make up a special list and that function as X words in a sentence.

Lesson Three: "The Subject and Predicate Positions"

Utilizing what was observed regarding the X position and its function, children are able to find the subject and the predicate. An opportunity

is provided for observing the length of and types of sectors which fill the subject position. Time is spent in expanding this position in the sentence.

Lesson Four: "Boinguage"

Through the use of a "pretend" language called "Boinguage," children are led to see that grammar signals are the various endings which indicate word forms, as well as those words which are primarily grammatical in function which do not change to a "boing" word in Boinguage. Boing is substituted for the meaning part of a word. Thus, boys becomes boings; slowly becomes boingly; and walked becomes boinged. Translating Boinguage sentences leads one to understand the significance of word endings in the total structure of a sentence.

Lesson Five: "Front and End Shifters"

The addition of a single word or word group to a sentence can add meaning to the total sentence when it appears at the beginning of the subject (Front) or at the conclusion of the predicate (End). These shiftable positions are filled by sentence adverbials and they can add variety to style of writing.

Lesson Six: "Putting Together What You Know"

Opportunities are provided for original sentence construction focusing on utilizing sentence positions which were taught in the previous lessons.

Lesson Seven: "Clusters"

Children learn to expand sentences by filling in slots with determiners (a special word list) and describers. Thus, the expanded parts become clusters, and they say more than a single word does in a sentence.

Lesson Eight: "Prepositions and Phrases"

The preposition as an introductory word in a phrase is presented (via a word list). Further expansion of sentence parts can be made by including the preposition combined with a cluster to make a phrase.

Lesson Nine: "Phrase Inside Clusters"

A cluster as made up of a determiner, describer, and main word becomes expanded by the inclusion of a prepositional phrase within the cluster. Example: the hunter in the forest.

Lesson Ten: "Phrases Inside Phrases"

The phrase itself can be expanded by including another phrase, thus expanding the sentence-position it fills. For example, in this sentence you may have, "The flowers on the mantle in the living room are beautiful." The entire phrase "on the mantle in the living room" goes with flowers making a phrase inside a phrase.

Lesson Eleven: "Pronominals"

The subject pronominals are listed as a one-word substitute for the subject position. Likewise, the object pronominals are listed and taught as one-word substitutes for objects.

Lesson Twelve: Additional opportunities are provided for using concepts taught by arranging for creative writing activities. Films without dialogue were made available to use as one way to stimulate writing. "A Chairy Tale" and "Rock in the Road" were two titles which were used.

The work in Discovery 2 followed this order:

Lessons One through Six: "The Verb Position in the Predicate"

Various verb forms are introduced with a description of their formation and their position in the predicate of a sentence. Extensive practice is given in using the various verb forms through pattern practice games and both oral and written activities calling attention to regional and social dialects. The M (middle adverb) position is introduced and words which fit the position are listed.

Lesson Seven: "The C Position in the Predicate"

The C position or complement follows the V position and completes the predicate. Study is made of the various types of sectors that can fill this position.

Lesson Eight: "Joiners"

The most common joiners are and, but, or, and so. They are used to connect the name kind of sectors such as: two subjects, two phrases, two verbs, two sentences, and so on. When they connect two whole sentences, a comma usually comes before the joiner.

Lessons Nine and Ten: "Using Half Sentences"

One way that a simple sentence can be made into a complex sentence is by cutting the sentence before an -ing verb and adding a new sentence to it. Example: "The dog was barking loudly" when cut before "barking"

and by adding a new sentence can become "Barking loudly, the dog ran across the street." Thus, you have made a one-and-a-half sentence. Also, a half sentence can be used in this way: "The dog barking loudly ran across the street." Thus, "barking loudly" becomes part of the subject.

In addition to the above lessons in grammar, many opportunities were provided for children to write. Four films without dialogue were used as a means of stimulating the imagination. They were: Hunter in the Forest, A Chairy Tale, Corral, and Rock in the Road. Also, some work was done in recognizing differences in levels of usage--nonstandard and standard. This was done through prepared worksheets which compared different ways to express ideas and which elicited discussion regarding social and regional dialects. Pattern practice games were used to give repetitive drills in hearing and using standard dialect in meaningful situations.